

> d his full

(FILE 'HOME' ENTERED AT 12:17:30 ON 01 OCT 1998)

FILE 'REGISTRY' ENTERED AT 12:17:37 ON 01 OCT 1998

L1           STRUCTURE UPLOADED  
L2           50 SEA SSS SAM L1  
L3           4244 SEA SSS FUL L1  
L4           383592 SEA DNA OR NUCLEIC ACID OR OLIGONUC?  
L5           1 SEA L4 AND L3  
L6           2 SEA XANTHENE DYE  
L7           17887 SEA XANTHENE  
L8           57 SEA L7 AND L3  
L9           396 SEA DYE  
L10          0 SEA L9 AND L8

FILE 'HCAPLUS' ENTERED AT 12:23:11 ON 01 OCT 1998

L11          22979 SEA L9  
L12          85 SEA L8  
L13          432575 SEA DNA OR NUCLEIC ACID OR OLIGONUC?  
L14          5 SEA L13 AND L12

FILE HOME

FILE REGISTRY

STRUCTURE FILE UPDATES: 26 SEP 98 HIGHEST RN 211795-24-3  
DICTIONARY FILE UPDATES: 30 SEP 98 HIGHEST RN 211795-24-3

TSCA INFORMATION NOW CURRENT THROUGH JUNE 29, 1998

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Stereochemical name changes have been adopted and appear in CN's  
beginning 6/29/98. See the online news message for details.

**\*\* Notice \*\*** If you recently ran a CSS search involving an  
AK-carbon connection, please enter NEWS  
at an arrow prompt for a message containing  
important details.

FILE HCAPLUS

Trying 9351006...Open

Welcome to STN International! Enter x:x

LOGINID:sssptal807exh

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

\*\*\*\*\* Welcome to STN International \*\*\*\*\*

NEWS 1 Feb 2 Web Page URLs for STN Seminar Schedule - N. America  
NEWS 2 Jun 30 STN Express 4.1 with Discover! for Macintosh Now  
Available

NEWS 3 Jun 29 REGISTRY Stereochemical Name Changes  
NEWS 4 Aug 12 CSS Structure Search Quirk Involving AK-C  
NEWS 5 Aug 18 German Automotive Database DKF (Dokumentation  
Kraftfahrwesen) New on STN  
NEWS 6 Aug 26 Meeting Abstracts for the 216th ACS Meeting Now  
in CPlus

NEWS EXPRESS Discover! is Year 2000 Compliant  
NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS INTER General Internet Information  
NEWS LOGIN Welcome Banner and News Items  
NEWS PHONE Direct Dial and Telecommunication Network Access to STN  
NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that  
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\*\*\*\*\* STN Columbus \*\*\*\*\*

FILE 'HOME' ENTERED AT 12:17:30 ON 01 OCT 1998

=> file registry

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.15	0.15

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STRUCTURE FILE UPDATES: 26 SEP 98 HIGHEST RN 211795-24-3  
DICTIONARY FILE UPDATES: 30 SEP 98 HIGHEST RN 211795-24-3

TSCA INFORMATION NOW CURRENT THROUGH JUNE 29, 1998

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\*\* Notice \*\* If you recently ran a CSS search involving an  
AK-carbon connection, please enter NEWS  
at an arrow prompt for a message containing  
important details.

=>

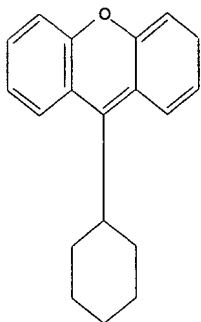
Uploading 942067.str

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s l1 sss sam

SAMPLE SEARCH INITIATED 12:18:15 FILE 'REGISTRY'  
 SAMPLE SCREEN SEARCH COMPLETED - 2156 TO ITERATE  
 46.4% PROCESSED 1000 ITERATIONS  
 INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
 SEARCH TIME: 00.00.01

50 ANSWERS

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
 BATCH \*\*COMPLETE\*\*  
 PROJECTED ITERATIONS: 40338 TO 45902  
 PROJECTED ANSWERS: 2892 TO 4524

L2 50 SEA SSS SAM L1

=> s l1 sss full

FULL SEARCH INITIATED 12:18:40 FILE 'REGISTRY'  
 FULL SCREEN SEARCH COMPLETED - 43321 TO ITERATE  
 100.0% PROCESSED 43321 ITERATIONS  
 SEARCH TIME: 00.00.11

4244 ANSWERS

L3 4244 SEA SSS FUL L1

=> s DNA or nucleic acid or oligonuc?

382312 DNA  
 1666 NUCLEIC  
 4314024 ACID  
 1618 NUCLEIC ACID  
 (NUCLEIC(W)ACID)  
 100 OLIGONUC?

L4 383592 DNA OR NUCLEIC ACID OR OLIGONUC?

=> s l4 and l3

L5 1 L4 AND L3

=> d all

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 1998 ACS  
 RN 191791-31-8 REGISTRY  
 CN Peptide nucleic acid, (acetyl-T-[N6-[[[9-[2-(ethoxycarbonyl)phenyl]-6-oxo-6H-xanthen-3-yl]oxy]acetyl]-L-lysyl]-C-G-T-A)-L-lys-NH2 (9CI) (CA INDEX NAME)

FS NUCLEIC ACID SEQUENCE; STEREOSEARCH  
 SQL 4  
 NA 1 a 1 c 1 g 1 t  
 NTE singlestranded  
 modified

type	location	description
modified base	c-1	5'-substituted
modified base	a-4	3'-deoxy
modified base	a-4	3'-nh2

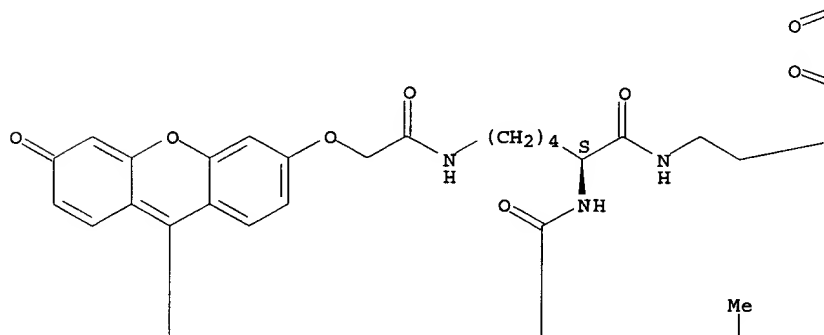
SEQ 1 cgta  
 MF C92 H112 N32 O25  
 SR CA  
 LC STN Files: CA

#### Ring System Data

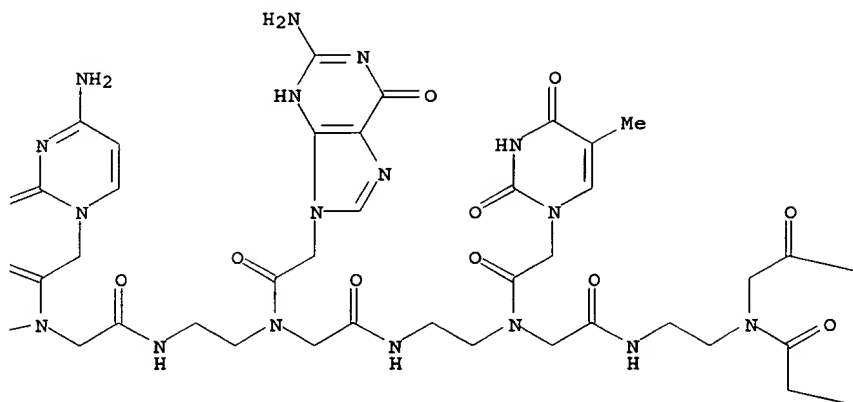
Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
C6	C6	6	C6	46.150.18	1
C4N2	NCNC3	6	C4N2	46.195.28	3
C3N2-C4N2	NCNC2-NCNC3	5-6	C5N4	333.446.88	2
C5O-C6-C6	OC5-C6-C6	6-6-6	C13O	2508.150.15	1

Absolute stereochemistry.

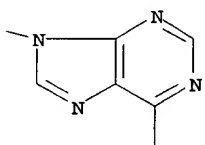
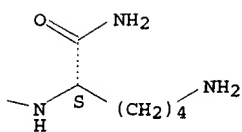
PAGE 1-A



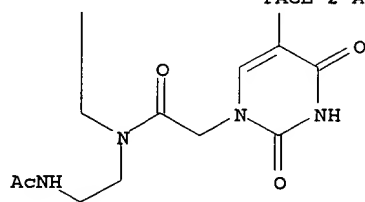
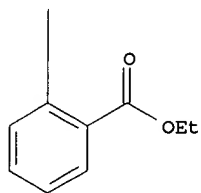
PAGE 1-B



PAGE 1-C



PAGE 2-A



PAGE 2 - C



1 REFERENCES IN FILE CA (1967 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

## REFERENCE 1

AN 127:81770 CA  
TI Fluorescein-Conjugated Lysine Monomers for Solid Phase Synthesis of  
Fluorescent Peptides  
AU Lohse, Jesper; Nielsen, Peter E.; Harrit, Niels; Dahl, Otto  
CS Department of Chemistry H. C. Orsted Institute, University of  
Copenhagen, Copenhagen, DK-2100, Den.  
SO Bioconjugate Chem. (1997), 8(4), 503-509  
CODEN: BCCHE; ISSN: 1043-1802  
PB American Chemical Society  
DT Journal  
LA English  
CC 34-3 (Amino Acids, Peptides, and Proteins)  
Section cross-reference(s): 27, 33  
AB Fluorescein Et ester was used to prep. the fluorescent mixed  
ester/ether 6-O-(carboxymethyl)fluorescein Et ester. Conjugation of  
the latter fluorescein deriv. to the .epsilon.-amino group of  
.alpha.-N-Boc-L-lysine, via the N-hydroxysuccinimide ester, gave the  
Boc-protected fluorescein-conjugated lysine monomer. Removal of the  
Boc group, followed by reaction with Fmoc chloride, gave the  
Fmoc-protected monomer. These Boc- and Fmoc-protected  
fluorescein-conjugated lysines were readily incorporated into  
peptides and PNA oligomers during solid phase synthesis to give  
fluorescent products. Mass spectroscopy and UV studies showed that  
the fluorophore remains unchanged during solid phase synthesis. In  
contrast to fluorescein, the photophys. properties of these derivs.  
are pH independent from pH 3 to 8, with a molar absorption coeff.,  
.epsilon.max 456, of 2.9 .times. 10<sup>4</sup> M<sup>-1</sup> cm<sup>-1</sup> and fluorescence  
quantum yield, .phi.f, of 0.18.  
ST fluorescein conjugated lysine peptide PNA  
IT Fluorescence  
(fluorescein-conjugated lysine monomers for solid phase synthesis  
of fluorescent peptides)  
IT Peptides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(fluorescein-conjugated lysine monomers for solid phase synthesis  
of fluorescent peptides)  
IT 191791-24-9P  
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);  
PREP (Preparation)  
(fluorescein-conjugated lysine monomers for solid phase synthesis  
of fluorescent peptides)  
IT 191791-32-9P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(fluorescein-conjugated lysine monomers for solid phase synthesis  
of fluorescent peptides)  
IT 5292-43-3, tert-Butyl bromoacetate 54613-99-9 72648-80-7  
RL: RCT (Reactant)  
(fluorescein-conjugated lysine monomers for solid phase synthesis  
of fluorescent peptides)  
IT 72616-76-3P 191791-14-7P 191791-17-0P 191791-20-5P  
191791-27-2P 191791-29-4P 191791-30-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(fluorescein-conjugated lysine monomers for solid phase synthesis  
of fluorescent peptides)  
IT 191791-31-8P 191791-33-0P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(fluorescein-conjugated lysine monomers for solid phase synthesis  
of fluorescent peptides)

=> d kwic

CN Peptide nucleic acid, (acetyl-T-[N6-[[[9-[2-(ethoxycarbonyl)phenyl]-6-oxo-6H-xanthen-3-yl]oxy]acetyl]-L-lysyl]-C-G-T-A)-L-lys-NH2 (9CI) (CA INDEX NAME)

Trying 9351006...Open

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LOGINID:sssptal807exh

PASSWORD:

\*\*\*\*\* RECONNECTED TO STN INTERNATIONAL \*\*\*\*\*  
SESSION RESUMED IN FILE 'REGISTRY' AT 12:21:53 ON 01 OCT 1998  
FILE 'REGISTRY' ENTERED AT 12:21:53 ON 01 OCT 1998  
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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	138.75	138.90
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-0.49	-0.49

=> d his

(FILE 'HOME' ENTERED AT 12:17:30 ON 01 OCT 1998)

FILE 'REGISTRY' ENTERED AT 12:17:37 ON 01 OCT 1998

L1 STRUCTURE UPLOADED  
L2 50 S L1 SSS SAM  
L3 4244 S L1 SSS FULL  
L4 383592 S DNA OR NUCLEIC ACID OR OLIGONUC?  
L5 1 S L4 AND L3

=> s xanthene dye

17887 XANTHENE  
396 DYE  
L6 2 XANTHENE DYE  
(XANTHENE(W)DYE)

=> s xanthene

L7 17887 XANTHENE

=> s 17 and 13

L8 57 L7 AND L3

=> s dye

L9 396 DYE

=> s 19 and 18

L10 0 L9 AND L8

=> file hcaplus

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	152.99	153.14
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-0.49	-0.49

FILE 'HCAPLUS' ENTERED AT 12:23:11 ON 01 OCT 1998  
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FILE COVERS 1967 - 1 Oct 1998 VOL 129 ISS 14  
FILE LAST UPDATED: 1 Oct 1998 (981001/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

=> s l9

L11 22979 L9

<-----User Break----->

=> s l8

L12 85 L8

=> d his

(FILE 'HOME' ENTERED AT 12:17:30 ON 01 OCT 1998)

FILE 'REGISTRY' ENTERED AT 12:17:37 ON 01 OCT 1998

L1 STRUCTURE UPLOADED  
L2 50 S L1 SSS SAM  
L3 4244 S L1 SSS FULL  
L4 383592 S DNA OR NUCLEIC ACID OR OLIGONUC?  
L5 1 S L4 AND L3  
L6 2 S XANTHENE DYE  
L7 17887 S XANTHENE  
L8 57 S L7 AND L3  
L9 396 S DYE  
L10 0 S L9 AND L8

FILE 'HCAPLUS' ENTERED AT 12:23:11 ON 01 OCT 1998

L11 22979 S L9  
L12 85 S L8

=> s l4

TOO MANY TERMS FOR FILE CROSSOVER IN L4

There are limits on the size of an answer set being crossed over from one file to another. Enter HELP CROSSOVER at an arrow prompt (=>) for specific information.

=> s dna or nucleic acid or oligonuc?

393801 DNA  
75415 NUCLEIC  
2233008 ACID  
45926 NUCLEIC ACID  
(NUCLEIC(W)ACID)  
37875 OLIGONUC?  
L13 432575 DNA OR NUCLEIC ACID OR OLIGONUC?

=> s l13 and l12

L14 5 L13 AND L12

=> d 1-5 all



L14 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 1998 ACS  
AN 1994:265157 HCAPLUS  
DN 120:265157  
TI Antibody-Mediated Fluorescence Enhancement Based on Shifting the  
Intramolecular Dimer .dblarw. Monomer Equilibrium of Fluorescent  
Dyes  
AU Wei, Ai-Ping; Blumenthal, Donald K.; Herron, James N.  
CS Departments of Pharmaceutics, University of Utah, Salt Lake City,  
UT, 84108, USA  
SO Anal. Chem. (1994), 66(9), 1500-6  
CODEN: ANCHAM; ISSN: 0003-2700  
DT Journal  
LA English  
CC 9-10 (Biochemical Methods)  
Section cross-reference(s): 15  
OS CJACS  
AB A novel concept is described for directly coupling fluorescence  
emission to protein-ligand binding. It is based on shifting the  
intramol. monomer .dblarw. dimer equil. of two fluorescent dyes  
linked by a short spacer. A 13-residue peptide, recognized by a  
monoclonal antibody against human chorionic gonadotropin (hCG), was  
labeled with fluorescein (F) and tetramethylrhodamine (T) at its N-  
and C-termini, resp. Spectral evidence suggests that when the  
conjugate is free in soln., F and T exist as an intramol. dimer.  
Fluorescence quenching of fluorescein and rhodamine is .apprx.98%  
and .apprx.90%, resp., due to dimerization. When the double-labeled  
peptide is bound to anti-hCG, however, the rhodamine fluorescence  
increases by .ltoreq.7.8-fold, depending upon the excitation  
wavelength. This is attributed to the dissocn. of intramol. dimers  
brought about by conformational changes of the conjugate upon  
binding. Fluorescein fluorescence was still quenched because of  
excited-state energy transfer and residual ground-state  
interactions. Antibody binding also resulted in a .apprx.3.4-fold  
increase in fluorescence anisotropy of the peptide. These changes in  
intensity and anisotropy allow direct measurement of  
antigen-antibody binding with a fluorescence plate reader or a  
polarization analyzer, without the need for sepn. steps and labeling  
antibodies. Because recent advances in peptide technol. have  
allowed rapid and economical identification of antigen-mimicking  
peptides, the double-labeled peptide approach offers many  
opportunities for developing new diagnostic assays and screening new  
therapeutic drugs. It also has many potential applications to  
techniques involving recombinant antibodies, biosensors, cell  
sorting, and DNA probes.  
ST antibody mediated fluorescence enhancement dye equil; homogeneous  
immunoassay fluorescent dye peptide label; dimerization fluorescent  
dye tracer immunoassay  
IT Immunoassay  
(homogeneous, fluorescent-labeled peptides as tracers in)  
IT Dimerization  
(of fluorescent dyes bound to oligopeptide, for homogeneous  
immunoassays)  
IT Dyes  
(fluorescent, dimerization of, in oligopeptide, for homogeneous  
immunoassays)  
IT Antibodies  
RL: ANST (Analytical study)  
(monoclonal, fluorescence enhancement mediation by, in  
homogeneous immunoassays)  
IT 9002-61-3, Chorionic gonadotropin  
RL: ANST (Analytical study)  
(fluorescein- and tetramethylrhodamine-labeled peptide from, for  
homogeneous immunoassays)  
IT 154653-16-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and reaction with carboxylfluorescein succinimidyl ester)  
IT 154673-75-3P  
RL: PREP (Preparation)

(prepn. of, as label for homogeneous immunoassays)

IT 154480-30-5  
 RL: RCT (Reactant)  
 (reaction of, with chorionic gonadotropin-derived peptide)

IT 154653-15-3  
 RL: RCT (Reactant)  
 (reaction of, with tetramethylrhodamine maleimide)

IT 92557-80-7  
 RL: RCT (Reactant)  
 (reaction of, with tetramethylrhodamine-labeled peptide)

L14 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 1998 ACS  
 AN 1993:97347 HCAPLUS  
 DN 118:97347  
 TI Fluorescent rhodol derivatives: versatile, photostable labels and tracers

AU Whitaker, James E.; Haugland, Rosaria P.; Ryan, Diane; Hewitt, Peter C.; Haugland, Richard P.; Prendergast, Franklyn G.  
 CS Mol. Probes, Inc., Eugene, OR, 97402, USA  
 SO Anal. Biochem. (1992), 207(2), 267-79  
 CODEN: ANBCA2; ISSN: 0003-2697

DT Journal  
 LA English  
 CC 9-5 (Biochemical Methods)

AB A series of chem. reactive, fluorescent rhodol derivs. was prepd. and evaluated. Reactive functional groups included activated esters, amines, haloacetamides, fixable hydrazide derivs., acrylamides, and photoaffinity reagents. Depending on the choice of substituents, absorption max. of the dyes varied from 490 to 550 nm with extinction coeffs. that were generally greater than 50,000 M<sup>-1</sup> cm<sup>-1</sup> in aq. soln. and emission max. from 520 to 580 nm. Most of the compds. investigated exhibited fluorescence lifetimes between 3 and 4 ns. Individual derivs. were suitable for excitation with the 488 and 514-nm lines of the argon ion laser and the 546-nm line of the mercury arc lamp and were compatible for use with std. fluorescein and rhodamine filter sets. The rhodol dyes were more photostable and less sensitive to pH changes in the physiol. range than fluorescein derivs. Some examples show absorption max. at or near 514 nm, an excitation wavelength that is useful for multicolor fluorescence microscopy, flow cytometry, and DNA sequencing. Derivs. were also prepd. that exhibit absorption and emission max. similar to those of tetramethylrhodamine (TMR) analogs but with higher quantum yields in aq. soln. A no. of the dyes had higher solubilities in aq. systems and were less quenched on conjugation to proteins than TMR derivs. Appropriate substitution results in a wider range of solubilities in hydrophilic or lipophilic solvents than is easily accomplished with fluorescein or TMR derivs. Conjugates of a no. of the rhodol fluorophores were generally more photostable and less pH sensitive than fluorescein conjugates and more fluorescent than TMR conjugates.

ST fluorescence rhodol deriv biochem

IT Fluorescent substances  
 (rhodol derivs. as, for biochem. studies)

IT Albumins, compounds  
 Proteins, specific or class  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (conjugates, prepn. and fluorescence properties of)

IT Dyes  
 (fluorescent, rhodol derivs. as, for biochem. studies)

IT 3086-44-0D, Rhodol, derivs. 145694-90-2 145694-91-3  
 145694-92-4 145694-93-5 145694-94-6 145694-95-7 145694-96-8  
 145694-97-9 145694-98-0 145694-99-1 145695-00-7 145695-01-8  
 145695-02-9 145695-03-0 145695-04-1 145695-05-2  
 145695-06-3 145695-07-4 145695-08-5 145695-09-6 145695-10-9  
 145695-11-0 145695-12-1 145695-13-2 145695-14-3 145695-15-4  
 145695-16-5 145695-17-6 145695-18-7 145695-19-8 145695-20-1  
 145695-21-2 145695-22-3 145695-23-4 145695-24-5 145695-25-6  
 145695-26-7 145695-27-8 145695-28-9 145695-29-0 145695-30-3  
 145695-31-4 145695-32-5 145695-33-6 145695-34-7 145695-35-8

RL: ANST (Analytical study)  
 (as fluorescent label and tracer for biochem. studies)

IT 9004-54-0D, Dextran, conjugates  
 RL: PRP (Properties)  
 (fluorescence property of)

IT 580-20-1, 7-Hydroxyquinoline  
 RL: RCT (Reactant)  
 (hydrogenation of)

IT 142975-81-3, 5-Carboxy-2',7'-dichlorofluorescein 144316-86-9,  
 6-Carboxy-2',7'-dichlorofluorescein  
 RL: RCT (Reactant)  
 (hydrolysis of)

IT 145695-36-9 145695-37-0  
 RL: ANST (Analytical study)  
 (in fluorescent label and tracer prepn. for biochem. studies)

IT 2321-07-5, Fluorescein 72088-94-9, Carboxyfluorescein 98181-63-6  
 RL: PRP (Properties)  
 (phys. properties of)

IT 145695-38-1P 145695-39-2P  
 RL: PREP (Preparation)  
 (prepn. of, for biochem. studies)

IT 17422-90-1  
 RL: RCT (Reactant)  
 (reaction of, with carboxybenzoyl hydroxyjulolidine)

IT 107070-67-7  
 RL: RCT (Reactant)  
 (reaction of, with carboxyethylresorcinol Me ester)

IT 58196-33-1, 7-Hydroxy-1,2,3,4-tetrahydroquinoline  
 RL: RCT (Reactant)  
 (reaction of, with chlorodicarboxybenzoylresorcinol)

IT 552-30-7  
 RL: RCT (Reactant)  
 (reaction of, with hydroxyjulolidine)

IT 145899-09-8 145899-10-1  
 RL: RCT (Reactant)  
 (reaction of, with hydroxytetrahydroquinoline)

IT 462-94-2, Cadaverine  
 RL: RCT (Reactant)  
 (reaction of, with hydroxytetrahydroquinolizinospiroisobenzofuran  
 xanthenonepropionic acid)

IT 71800-32-3  
 RL: RCT (Reactant)  
 (reaction of, with hydroxytetrahydroquinolizinospiroisobenzofuran  
 xanthenonepropionylcadaverine)

IT 41175-50-2, 8-Hydroxyjulolidine  
 RL: RCT (Reactant)  
 (reaction of, with trimellitic anhydride)

L14 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 1998 ACS

AN 1992:525473 HCAPLUS

DN 117:125473

TI DNA sequencing with dye-labeled terminators and T7

DNA polymerase: effect of dyes and dNTPs on incorporation  
 of dye-terminators and probability of termination fragments

AU Lee, Linda G.; Connell, Charles R.; Woo, Sam L.; Cheng, Richard D.;  
 McArdle, Bernard F.; Fuller, Carl W.; Halloran, Nicolette D.;  
 Wilson, Richard K.

CS Appl. Biosyst. Inc., Foster City, CA, 94404, USA

SO Nucleic Acids Res. (1992), 20(10), 2471-83

CODEN: NARHAD; ISSN: 0305-1048

DT Journal

LA English

CC 3-1 (Biochemical Genetics)

AB The incorporation of fluorescently labeled dideoxynucleotides by T7  
 DNA polymerase is optimized by the use of Mn2+, fluorescein  
 analogs and four 2'-deoxyribonucleoside 5'-O-(1-thiitriphosphates)  
 (dNTP.alpha.S's). The one-tube extension protocol was tested on  
 single-stranded templates, as well as PCR fragments which were made  
 single-stranded by digestion with T7 gene 6 exonuclease. Dye primer  
 sequencing using four dNTP.alpha.S's was shown to give uniform

termination patterns which were comparable to four dNTPs. Efficiency of the polymerase also appeared to improve with the dNTP.alpha.S's. A math. model was developed to predict the pattern of termination based on enzyme activity and ratios of ddNTP/dNTPs. This method can be used to optimize sequencing reactions and the est. enzyme discrimination consts. of chain terminators.

- ST DNA sequence detn dye terminator polymerase  
 IT Deoxyribonucleic acid sequence determination  
 (method for, with T7 DNA polymerase and dye terminator)  
 IT Virus, bacterial  
 (T7, DNA polymerase of, in DNA sequence detn.  
 with dye terminator)  
 IT Nucleotides, uses  
 RL: USES (Uses)  
 (deoxyribo-, thiotriphosphate derive., use of, in DNA  
 sequence detn. with T7 DNA polymerase and dye  
 terminator)  
 IT 9012-90-2, Dna polymerase  
 RL: USES (Uses)  
 (of phage T7, in DNA sequence detn. with dye  
 terminator)  
 IT 9068-32-0  
 RL: USES (Uses)  
 (of phage T7, use of, in DNA sequence detn. with T7  
 DNA polymerase and dye terminator)  
 IT 142975-79-9P 142975-80-2P  
 RL: PREP (Preparation)  
 (prepn. of)  
 IT 538-75-0 6066-82-6  
 RL: RCT (Reactant)  
 (reaction of, with fluorescein dye)  
 IT 82855-39-8 82855-40-1 82855-42-3 82870-54-0 91809-67-5  
 142975-81-3 142975-82-4 142975-83-5 142975-84-6 142975-85-7  
 142975-86-8 142975-87-9 142975-88-0 142975-89-1 142975-90-4  
 142975-91-5 142975-92-6 142975-93-7  
 RL: RCT (Reactant)  
 (reaction of, with hydroxysuccinimide and  
 dicyclohexylcarbodiimide)  
 IT 114748-56-0D, fluorescein dye conjugate 114748-59-3D, fluorescein  
 dye conjugate 114748-61-7D, fluorescein dye conjugate  
 114748-69-5D, fluorescein dye conjugate 142975-54-0 142975-55-1  
 142975-56-2 142975-57-3 142975-58-4 142975-59-5 142975-60-8  
 142975-61-9 142975-62-0 142975-63-1 142975-64-2 142975-65-3  
 142975-66-4 142975-67-5 142975-68-6 142975-69-7 142975-70-0  
 142975-71-1 142975-72-2 142975-73-3 142975-74-4 142975-75-5  
 142975-76-6 142975-77-7 142975-78-8 143125-98-8  
 143125-99-9 143148-01-0  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES  
 (Uses)  
 (use of, as dye-terminator, in DNA sequence detn. with  
 T7 DNA polymerase)  
 IT 2321-07-5D, Fluorescein, analogs  
 RL: USES (Uses)  
 (use of, in DNA sequence detn. with T7 DNA  
 polymerase and dye terminator)

L14 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 1998 ACS  
 AN 1991:202850 HCAPLUS  
 DN 114:202850  
 TI SNARF-1 as an intracellular pH indicator in laser  
 microspectrofluorometry: a critical assessment  
 AU Seksek, Olivier; Henry-Toulme, Nelly; Sureau, Franck; Bolard,  
 Jacques  
 CS Lab. Phys. Chim. Biomol., Univ. Pierre et Marie Curie, Paris, 75252,  
 Fr.  
 SO Anal. Biochem. (1991), 193(1), 49-54  
 CODEN: ANBCA2; ISSN: 0003-2697  
 DT Journal  
 LA English  
 CC 9-5 (Biochemical Methods)

AB The use of SNARF-1-AM (seminaphtorhodafluor-1-acetoxymethylester) to measure the internal pH of a single living cell by laser microspectrofluorometry has been analyzed with a lymphocyte murine B cell line A20. After incubation of the cells at 37.degree.C in the presence of 10 .mu.M SNARF-1-AM, the internal concn. of SNARF-1 was approx. 200 .mu.M. The enhancement of fluorescent intensity of the probe is concomitant with its leakage out of the cells. During the measurement period, this induces a continuous increase of the contribution of the external probe to the total fluorescence intensity. This prevented classical spectrofluorometry measurements, but did not preclude microspectrofluorometry measurements of internal pH. The ratio R was calcd. from fluorescence intensities at 635 and 590 nm and used as an indicator of the intracellular pH. Calibration curves of the intracellular pH were obtained in the presence of nigericin and valinomycin. It appeared that both the fluorescence intensity and the ratio R were lower inside the cell than those values obtained in aq. solns. Possible interactions with the main biol. macromols. (i.e., DNA, proteins, membranes) were investigated as well as a possible compartmentation of the probe in cellular organelles. The modifications of probe characteristics inside the cells were attributed to the binding of the probe to cellular proteins. The intracellular pH of A20 cells, measured by SNARF-1 on 84 cells, was found to be 7.18 (with an external pH of 7.40), which corresponded with values obtained by conventional fluorometric methods.

ST intracellular pH indicator SNARF1; laser microspectrofluorometry pH indicator SNARF1

IT pH  
(detn. of intracellular, with SNARF-1 indicator and laser microspectrofluorometry)

IT Animal cell  
(pH detn. in, intracellular, with SNARF-1-AM indicator and laser microspectrofluorometry)

IT Lymphocyte  
(B-, pH detn. in, intracellular, with SNARF-1-AM indicator and laser microspectrofluorometry)

IT 126208-12-6, SNARF 1 133613-74-8  
RL: ANST (Analytical study)  
(in intracellular pH detn.)

IT 12408-02-5  
RL: ANST (Analytical study)  
(pH, detn. of intracellular, with SNARF-1 indicator and laser microspectrofluorometry)

L14 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 1998 ACS

AN 1990:480527 HCAPLUS

DN 113:80527

TI Fluorescent xanthene dyes which have absorption and emission at longer wavelength than fluorescein

IN Lee, Linda

PA Becton, Dickinson and Co., USA

SO Eur. Pat. Appl., 17 pp.  
CODEN: EPXXDW

PI EP 357350 A2 19900307

DS R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE

AI EP 89-308642 19890824

PRAI US 88-238945 19880831

DT Patent

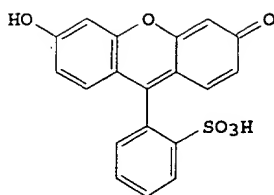
LA English

IC ICM C09B011-28  
ICS G01N033-569; G01N033-577

CC 41-8 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
Section cross-reference(s): 9, 27

OS MARPAT 113:80527

GI



I

- AB The title dyes, which have reduced background fluorescence competition from biol. materials (e.g., DNA), and can be coupled to tagging agents such as monoclonal antibodies and used to detect cells in a sample, are prepd. Thus, resorcinol was cyclocondensed with 2-sulfobenzoic anhydride in the presence of polyphosphoric acid, producing I,  $\lambda_{\text{max}}$  497 nm, emission max. 517 nm, quantum yield 0.92, and  $\epsilon$  7.8 x 10<sup>4</sup> M<sup>-1</sup>cm<sup>-1</sup>.
- ST fluorescent xanthene dye manuf; monoclonal antibody xanthene dye conjugate
- IT Dyes  
(fluorescent, xanthene compds., manuf. of, having spectral absorption and emission max. to red of fluorescein)
- IT Antibodies  
RL: USES (Uses)  
(monoclonal, dyes for conjugation with, fluorescent xanthene compds. as)
- IT 2513-33-9, 2-Carboxy-2',4'-dihydroxybenzophenone  
RL: RCT (Reactant)  
(cyclocondensation of, with (dimethylamino)phenol)
- IT 81-08-3, 2-Sulfobenzoic anhydride  
RL: RCT (Reactant)  
(cyclocondensation of, with resorcinol)
- IT 108-46-3, 1,3-Benzenediol, reactions  
RL: RCT (Reactant)  
(cyclocondensation of, with sulfobenzoic anhydride)
- IT 99-07-0, 3-Dimethylaminophenol  
RL: RCT (Reactant)  
(cyclocondensation reaction of, with carboxydihydroxybenzophenone)
- IT 108-24-7  
RL: RCT (Reactant)  
(esterification by, of sulfonefluorescein)
- IT 122079-33-8P 122079-34-9P 122079-35-0P 122079-36-1P  
122079-39-4P 128603-56-5P  
RL: PREP (Preparation)  
(manuf. of, as fluorescent dye)
- IT 9016-18-6DP, conjugates with Vita Blue dibutyrate 122079-39-4DP, conjugate with pig liver esterase  
RL: PREP (Preparation)  
(manuf. of, as fluorescent probe)
- IT 2321-07-5P, Fluorescein 4424-03-7P, Sulfonefluorescein  
61419-02-1P 122079-32-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and reaction of, in fluorescent dye manuf.)
- IT 34684-21-4P, 2-Chlorosulfonylbenzoyl chloride  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and reaction of, with dihydroxynaphthalene)
- IT 122079-38-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and transesterification of)
- IT 85-44-9, 1,3-Isobenzofurandione 88-95-9, Phthaloyl dichloride  
34684-21-4, 2-Chlorosulfonylbenzoyl chloride  
RL: RCT (Reactant)  
(reaction of, with dihydroxynaphthalene)
- IT 7726-95-6, Bromine, reactions  
RL: RCT (Reactant)  
(reaction of, with fluorescein derivs.)
- IT 81-08-3, 2-Sulfobenzoic anhydride  
RL: RCT (Reactant)

(reaction of, with phosphorus pentachloride)  
IT 575-44-0, 1,6-Dihydroxynaphthalene  
RL: RCT (Reactant)  
(reaction of, with phthalic anhydride)  
IT 132-86-5, 1,3-Dihydroxynaphthalene  
RL: RCT (Reactant)  
(reaction of, with phthaloyl dichloride)  
IT 10026-13-8, Phosphorus pentachloride  
RL: RCT (Reactant)  
(reaction of, with sulfobenzoic anhydride)  
IT 106-31-0, Butyric anhydride  
RL: RCT (Reactant)  
(transesterification by, of Vita Blue diacetate)

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(FILE 'HOME' ENTERED AT 12:17:30 ON 01 OCT 1998)

FILE 'REGISTRY' ENTERED AT 12:17:37 ON 01 OCT 1998

L1 STRUCTURE UPLOADED  
L2 50 SEA SSS SAM L1  
L3 4244 SEA SSS FUL L1  
L4 383592 SEA DNA OR NUCLEIC ACID OR OLIGONUC?  
L5 1 SEA L4 AND L3  
L6 2 SEA XANTHENE DYE  
L7 17887 SEA XANTHENE  
L8 57 SEA L7 AND L3  
L9 396 SEA DYE  
L10 0 SEA L9 AND L8

FILE 'HCAPLUS' ENTERED AT 12:23:11 ON 01 OCT 1998

L11 22979 SEA L9  
L12 85 SEA L8  
L13 432575 SEA DNA OR NUCLEIC ACID OR OLIGONUC?  
L14 5 SEA L13 AND L12

FILE HOME

FILE REGISTRY

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DICTIONARY FILE UPDATES: 30 SEP 98 HIGHEST RN 211795-24-3

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